UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,377	04/30/2004	Ronald K. Maxwell	57640.010274	3376

34018 7590 08/13/2007

GREENBERG TRAURIG, LLP
77 WEST WACKER DRIVE
SUITE 2500
CHICAGO, IL 60601-1732

EXAMINER	
ROST, ANDREW J	

ART UNIT	PAPER NUMBER
3753	

MAIL DATE	DELIVERY MODE
08/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/709,377	MAXWELL ET AL.	
	Examiner	Art Unit	
	Andrew J. Rost	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/4/2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8 and 10-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8 and 10-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 contains the limitation of "pinion wheels impart forces to the plate substantially exclusively in the direction of movement of the plate" in lines 13-14. It is unclear as to scope of the term "substantially exclusively". Therefore, the claim is indefinite.

Claim 15 contains the limitation of "pinion wheels impart forces to the plate substantially exclusively in the direction of movement of the plate" in lines 15-16. It is unclear as to scope of the term "substantially exclusively". Therefore, the claim is indefinite.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-8 and 10-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bachmann et al. (4,327,893) in view of Imase et al. (6,023,989).

Regarding claims 1 and 15, Bachmann et al. disclose a damper containing a plate (45) having parallel sides, two rotating gears (57) that interact with racks on the edges of the plate with the gears having a center of rotation and rotating and supported by a shaft (53). Bachmann et al. does not disclose the use of pinion wheels with pinion pins that interact with a toothed rack. However, Imase et al. teach the use of a pinion wheel with pinion pins interacting with a toothed rack (Fig. 1) to perform a similar function as a gear interacting with a pin rack (Fig. 10) and to perform as a torque transmission device that is capable of suppressing noise and vibration (Col. 2, lines 35-40). Imase et al. teach the use of a toothed rack having a series of teeth (4) with the teeth having opposing sides that are substantially parallel to one another (side faces of the teeth are parallel to each other and perpendicular to the direction of movement of the plate). The Imase et al. reference further teaches the transmission of a rotary motion of the pinion wheel into the linear movement of a plate in a desired direction. Because both Bachmann et al. and Imase et al. teach the use of rack and pinion systems for transferring a rotational movement into a linear movement of a plate structure, it would have been obvious to one skilled in the art to substitute one rack and pinion system for the other to achieve the predictable result of raising and lowering a plate structure.

In regards to claims 2 and 16, the modified Bachmann et al. reference discloses a toothed rack on the parallel edges of the gate and a pinion wheel engaging each of the toothed racks.

In regards to claims 3 and 18, the modified Bachmann et al. reference discloses a motor for operating the pinion wheels (motor 50 in Bachmann et al.).

In regards to claims 4 and 19, the modified Bachmann et al. reference discloses the pinion wheels are operating in counter-rotating directions which cause the plate to be translated into and out of engagement.

In regards to claim 5, the modified Bachmann et al. reference discloses the pinion wheels contain two wheel-shaped plates (11 in Imase et al.) with a plurality of pins (6 in Imase et al.) connecting the two plates.

In regards to claims 6 and 7, the modified Bachmann et al. reference discloses the pins are rounded in shape and evenly spaced around a hub (Fig. 2 of Imase et al.).

In regards to claim 8, the modified Bachmann et al. reference discloses the rack and pinion may be made of iron, mild steel, plastic or ceramic material (Col. 9, lines 1-3 of Imase et al.).

In regards to claims 10 and 19, the modified Bachmann et al. reference discloses a single motor (50 in Bachmann et al.) having a first actuator (gear box 52) that is coupled to one of the pinion wheels and a second actuator (other gear box 52) that is coupled to the other of the pinion wheels and a shaft connecting the two actuators (shaft 51 in Bachmann et al.).

In regards to claim 11, the modified Bachmann et al. reference discloses flexible joints (connection pieces used of connecting gear box 52 to the shaft 51 in Bachmann et al.) between the actuators and connecting shaft.

In regards to claim 12, the modified Bachmann et al. reference discloses rotating the pinion wheels in opposite directions.

In regards to claim 13, the modified Bachmann et al. reference discloses the rack is composed of metal and is integral to the plate.

In regards to claim 14, the modified Bachmann et al. reference discloses the pinion pins are offset from the outer edge of the pinion wheel (Fig. 1 of Imase et al.).

In regards to claim 17, the modified Bachmann et al. reference discloses the pinion wheels having two parallel plates having a polarity of pinion pins disposed about a center portion (Fig. 2 of Imase et al.).

In regards to claim 21, the modified Bachmann et al. reference discloses a hook (60) holding the seal frame (58). When disconnected from the surrounding structure, the seal frame can be removed by means of the hook.

Response to Arguments

5. Applicant's arguments filed 5/4/2007 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re*

Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Imase et al. teach the use of a pinion wheel with pinion pins interacting with a toothed rack and a pinion with teeth interacting with a rack with pinion pins to be of identical fundamental structure except for the reversed relationship (col. 7, lines 43-50). Bachmann et al. disclose a blade damper that utilizes a pinion with teeth interacting with a rack having pinion pins. Therefore, the teaching of Imase et al. is that using a pinion wheel with pinion pins to interact with a toothed rack is of the same fundamental structure as using a pinion with teeth to interact with a rack having pinion pins.

In response to applicant's argument regarding the teeth having opposing sides extending parallel to one another on page 10, second full paragraph, applicant's attention is directed figure 1 of Imase et al. Imase et al. discloses the toothed rack (5) having teeth (4). These teeth have opposing sides that are parallel to each other with the opposing sides being perpendicular to the direction of movement of the plate. The parallel sides of the teeth can also bee seen in figure 3. It appears that applicant is arguing that the teeth have opposing sides extending parallel to each other with the pinion wheels contacting the opposing sides. However, that limitation is not presented in the currently amended claims.

Therefore, applicant's arguments are not persuasive.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brooks (1,483,041) discloses a valve assembly having a gear

wheel interacting with a series of teeth to rise and lower a gate with the teeth having opposing sides that are substantially parallel to each other and having the gear wheel interact with the opposing sides that are substantially parallel to each other.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew J. Rost whose telephone number is 571-272-2711. The examiner can normally be reached on 7:00 - 4:30 M-Th and 7:00 - 12:00 Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJR/ASR 03 AUGUST 2007

GREGORY HUSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700